APRIL/MAY 2024

23UBC21 — CELL BIOLOGY

Time : Three hours Maximum : 75 marks

SECTION A — (10 × 2 = 20 marks)

Answer ALL questions.

1. What is the roles of ER in cellular processes?
2. List any two functions of lysosomes.
3. What is Nucleosome?
4. What are Intermediary filaments?
5. Define uniport.
6. What is a biomembrane?
7. Define prophase.
8. List the characteristics of cancer cells.
9. What are desmosome?
10. What is the role of laminin?

SECTION B — (5 × 5 = 25 marks)

Answer ALL questions.

11. (a) Draw the structure of the Golgi complex and explain its cellular function.

Or

(b) List the function of nucleus.

12. (a) Describe the cytoskeleton structure, highlighting the roles of microtubules.

Or

(b) Compare prokaryotic and eukaryotic genome organization.

13. (a) Compare the mechanisms of active and passive transport.

Or

(b) Explain symport and antiport.

14. (a) Differentiate between mitosis and meiosis.

Or

(b) Briefly explain mitotic cell division.

15. (a) Enumerate the significance of cell-cell interactions in tissue development.

Or

(b) Compare the functions and structures of gap junctions and tight junctions.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Discuss the structural organization of the mitochondria and its functions.

17. Describe the structure and functions of microfilament.

18. How does the lipid bilayer model contribute to the structural organization of cell membranes and what are its basic functions?

19. Outline the phases of the cell cycle.

20. Explain the structure and biological functions of proteoglycans.

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